This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Industrial permit. The 0.555 MGD discharge results from the operation of a 225 MGD water treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1.	Facility Name and Mailing Address:	Corbalis Water Treatment Plant 8570 Executive Park Ave Fairfax, VA 22031-2218	SIC Code :	4941 WTP
	Facility Location:	1295 Fred Morin Road Herndon, VA 22070	County:	Fairfax
	Facility Contact Name:	Chad Coneway	Telephone Number:	(703) 289-6568
	Facility E-mail Address:	cconeway@fairfaxwater.org		
2.	Permit No.:	VA0087874	Expiration Date of previous permit:	May 10, 2014
	Other VPDES Permits associated with this facility:		None	
	Other Permits associated with this facility:		Air – VA71873 Fairfax County Wastewater Permit – A30312	
	E2/E3/E4 Status:	Not Applicable (NA)		
3.	Owner Name:	Fairfax County Water Authority dba Fairfax Water		
	Owner Contact/Title:	Joel Thompson Director, Production	Telephone Number:	(703) 289-6000
	Owner E-mail Address:	jthompson@fairfaxwater.org		
4.	Application Complete Date:	November 6, 2013		
	Permit Drafted By:	Alison Thompson	Date Drafted:	March 18, 2014
	Draft Permit Reviewed By:	Joan Crowther	Date Reviewed:	March 19, 2014
	Public Comment Period :	Start Date: April 17, 2014	End Date:	May 17, 2014

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Outfall 001:

Receiving Stream Name :	Sugarland Run	Stream Code:	1aSUG
Drainage Area at Outfall:	<5 sq.mi.	River Mile:	6.58
Stream Basin:	Potomac	Subbasin:	Potomac
Section:	9	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-A10R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

Outfall 002:

Receiving Stream Name :	Sugarland Run, UT	Stream Code:	1aOFT
Drainage Area at Outfall:	<5 sq.mi.	River Mile:	0.82
Stream Basin:	Potomac	Subbasin:	Potomac
Section:	9	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-A10R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

Outfall 003:

Receiving Stream Name :	Old Sugarland Run, UT	Stream Code:	1aXIW
Drainage Area at Outfall:	<5 sq.mi.	River Mile:	0.24
Stream Basin:	Potomac	Subbasin:	Potomac
Section:	8c	Stream Class:	III
Special Standards:	PWS	Waterbody ID:	VAN-A10R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

✓	State Water Control Law		EPA Guidelines
✓	Clean Water Act	✓	Water Quality Standards
✓	VPDES Permit Regulation	✓	Other: WTP General Permit
✓	EPA NPDES Regulation		(9VAC25-860)

7. Licensed Operator Requirements: Not Applicable

8. Reliability Class: Not Applicable

9. Permit Characterization:

	Private		Effluent Limited	✓	Possible Interstate Effect
	Federal	✓	Water Quality Limited		Compliance Schedule Required
	State		Whole Effluent Toxicity Program Required		Interim Limits in Permit
✓	WTP		Pretreatment Program Required		Interim Limits in Other Document
✓	TMDL	✓	e-DMR Participant		

10. Wastewater Sources and Treatment Description:

This 225-MGD Water Treatment Plant produces potable water for Fairfax County and is operated by Fairfax Water. Water from the Potomac River is pumped to the Raw Water Control Chamber; in case of an emergency, the chamber has an overflow weir that would allow the river water to flow into Detention Pond C. Depending on the raw water quality, operators can add coagulant, sulfuric acid, sodium hypochlorite, coagulant aid, and/or caustic soda in this chamber. The raw water enters a rapid mix chamber and then into the flocculation and sedimentation basins. The clarified water flows into the ozonation chamber and is then filtered using granular activated carbon capped multimedia filters. Filters are backwashed as necessary. The backwash water is piped into two reclamation basins for processing through two plate settlers. The clarified backwash water is recycled to the raw water line and through the treatment process. The filtered water is chlorinated with sodium hypochlorite and stored in one of two clearwells. The operators can also add caustic soda, fluoride, and phosphoric acid prior to the clearwells. Fairfax Water adds ammonia prior to distribution to keep a combined chlorine residual in the distribution system. In the spring, ammonia addition is halted to allow for the annual spring flushing of the system.

Discharges from Outfalls 001, 002, and 003 are outlined in Table 1.

In Form 2C, the facility indicated that for Outfall 001, the main flow contribution, besides stormwater, is from the building underdrains. Less frequently, there can be flows from thickener basin overflow, flocculation/sedimentation basin overflow, clearwell overflow, the clearwell drain, the finished water pump room drain, and the water reclamation basin overflow. Treatment for this outfall includes a retention basin and dechlorination.

For Outfall 002, the main flow contributions besides stormwater include thickener supernatant and filtrate, washwater reclamation basin drain, the raw water control chamber overflow, raw water pipeline flushing, and thickener drain. Treatment for the flows to this outfall includes a retention basin and neutralizaiton.

Outfall 003 receives backwash water from the raw water screens at the Potomac River. Screened river water is used to backwash the screens when they become clogged. There is no treatment of the backwash water.

See Attachment 2 for the NPDES Permit Rating Worksheet.

See Attachment 3 for a facility schematic/diagram.

TABLE 1 – Outfall Description				
Outfall Number	**Discharge Sources and Frequency**	**Treatment**	**Flow Average (all sources)**	**Outfall Latitude and Longitude**
001	Building Underdrain – 7 days/week, Thickener Basin Overflow – 1/15 years, Water Reclamation Basins Overflow – 1/15 years, Flocculation/Sedimentation Basin Overflow – 1/15 years, Clearwell Overflow – 1/15 years, Clearwell Drain – 1/15 years, Pump Room Drain – 1/15 years, Industrial Stormwater - 9.9 acres of impervious area	Dechlorination (for the Building Underdrain Flow) and Detention Ponds A and B.	0.133 MGD	38.59.30 77.22.00
002	Thickener Supernatant and Filtrate Drain – 7 days/week, Washwater Reclamation Basin Drain – 1/15 years, Thickener Drain – 1/15 years, Raw Water Control Chamber Overflow – 1/15 years, Raw Water Pipeline Flushing – 1/15 years, Industrial Stormwater – 6.8 acres of impervious area	Neutralization (for the Thickener Supernatant) and Detention Ponds C and E.	0.322 MGD	38.59.45 77.21.30
003	Screen Backwash Water – 7 days/week	Detention Basin	0.10 MGD	39.03.15 77.20.31
The discharge locations are identified on the attached topographic maps – Seneca, MD Quadrangle (DEQ 214D) and Vienna Quadrangle (DEQ#205A) (Attachment 4).				

11. Solids Treatment and Disposal Methods:

Solids are generated from filter backwash activities and from the water treatment sedimentation basins.

When the multi-media filters are backwashed, the solids laden water is piped to two reclamation basins. Once the solids are processed through the plate settler, the backwash water is recycled through the water treatment process. The solids residuals from the plate settlers are then pumped to one of four gravity thickener tanks at the Solids Dewatering Facility for dewatering processing and offsite disposal. In the rare event one of these thickeners overflows or needs to be drained, these solids are pumped to Detention Pond C every 2-3 months. Pond C discharges to Outfall 002.

Coagulant (Polyaluminum Chloride) is added to the raw water in a rapid mix chamber. The coagulated solids settle in the sedimentation basins and are periodically cleaned out. The solids are pumped to gravity thickeners and are then processed through belt filter presses or plate and frame (124 plates each) dewatering equipment. The volume of wet tons produced is dependent on the water production rate and the raw water turbidity. The pressed solids are stored on a concrete pad until the contractor hauls them to permitted land application sites. Any runoff from the concrete pad flows to Pond E and eventually to Outfall 002.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2	
1aSUG004.42	DEQ's Ambient Water Quality Monitoring Station on Sugarland Run located at the Route 7 Bridge, approximately 2.2 miles downstream of Outfall 002.
1aSUG006.28	DEQ Biological Monitoring Station located at Wiehle Avenue, approximately 0.2 miles downstream of Outfall 001.
1aSUG003.52	DEQ Biological Monitoring Station near Brasswood Place.

The intake for this WTP is located within 5 miles downstream of Outfall 003.

13. Material Storage:

See Attachment 5 for a list of materials and their quantities that was provided with the permit application.

14. Site Inspection:

Performed by DEQ-Compliance on April 7, 2008 (Attachment 6).

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

Outfall 001
Outfall 001 discharges into Sugarland Run. The closest DEQ monitoring station is a biological monitoring station, 1aSUG006.28, located at Wiehle Avenue, approximately 0.2 miles downstream of Outfall 001. The following is the summary for this portion of Sugarland Run, as taken from the 2012 Integrated Report:

> The DEQ monitoring station located in this segment of Sugarland Run is biological monitoring station 1aSUG006.28, at Wiehle Avenue. Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Citizen monitoring also finds a high probability of adverse conditions for biota.
>
> The fish consumption, recreation, and wildlife uses were not assessed.

Outfall 002
Outfall 002 discharges into an unnamed tributary to Sugarland Run. The closest downstream DEQ monitoring station is a trend ambient monitoring station, 1aSUG004.42, located on Sugarland Run. This station is located at the Rt. 7 Bridge, approximately 2.2 miles downstream of Outfall 002. The following is the summary for this portion of Sugarland Run, as taken from the 2012 Integrated Report:

> The DEQ monitoring stations located in this segment of Sugarland Run are biological monitoring station 1aSUG003.52 near Brasswood Place and an ambient water quality monitoring station 1aSUG004.42, at Route 7. *E. coli* monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use.
>
> Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Citizen monitoring finds a high probability of adverse conditions for biota.
>
> The wildlife use is considered fully supporting. The fish consumption use was not assessed.

Outfall 003

Outfall 003 discharges into an unnamed tributary to Old Sugarland Run. The closest DEQ monitoring stations are a biological monitoring station and an ambient trend station located on Sugarland Run, upstream of the confluence of Old Sugarland Run with Sugarland Run. These stations are located 2.7 miles and 3.7 miles upstream of the confluence, respectively, near Brasswood Place and the Rt. 7 Bridge. The following is the summary for this portion of Sugarland Run, as taken from the 2012 Integrated Report:

> The DEQ monitoring stations located in this segment of Sugarland Run are biological monitoring station 1aSUG003.52 near Brasswood Place and an ambient water quality monitoring station 1aSUG004.42, at Route 7. *E. coli* monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use.
>
> Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Citizen monitoring finds a high probability of adverse conditions for biota.
>
> The wildlife and public water supply uses are considered fully supporting. The fish consumption use was not assessed.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 3 -303(d) Impairment and TMDL information for the receiving stream segment (Outfall 001)

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report						
Sugarland Run	Aquatic Life	Benthic Macroinvertebrates	No	NA	NA	2024

TABLE 4 - Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report							
Sugarland Run	Aquatic Life	Benthic Macroinvertebrates	Outfall 002: 0.8 miles Outfall 003: 1.2 miles	No	NA	NA	2024
	Recreation	*E. coli*	Outfall 001: 1.8 miles Outfall 002: 0.8 miles Outfall 003: 1.2 miles	No*	Not expected to discharge pollutant	---	---

** The Sugarland Run, Mine Run and Pimmit Run Bacteria TMDL was completed and approved by EPA on September 26, 2013. The Corbalis WTP did not receive a WLA in this TMDL as it is not expected to discharge the pollutant of concern (bacteria). Information regarding the completed bacteria TMDL will be included in the 2014 Integrated Report.*

Outfall 001 discharges directly to a portion of Sugarland Run that was listed in the 2012 Integrated Report as impaired, due to poor health of the benthic macroinvertebrate communities. In support of this recent listing and the development of a benthic TMDL in the future, DEQ assessment staff requests that this facility monitor for total dissolved solids, conductivity, and nutrients (total phosphorus, nitrate, nitrite and

ammonia) at this outfall. Since Outfall 002 discharges to an unnamed tributary to Sugarland Run, these same parameters shall be monitored at Outfall 002 as well.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient monitoring for this facility to implement the provisions of the Chesapeake Bay TMDL.

The planning statement is found in Attachment 7.

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving streams for Outfalls 001 and 002, Sugarland Run and Sugarland Run, UT, are located within Section 9 of the Potomac River Basin, and classified as a Class III waters. The receiving stream for Outfall 003, Old Sugarland Run, UT, is located within Section 8c of the Potomac River Basin, and classified as a Class III waters.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 8 details other water quality criteria applicable to the receiving stream.

Ammonia:
The fresh water, aquatic life Water Quality Criteria for Ammonia are dependent on the instream temperature and pH. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream. DEQ Ambient Monitoring data from all monitoring stations from January 1990 through February 2011 was used to determine the 90^{th} percentile pH and temperature values for watershed VAN-A10R. The 90^{th} percentile pH was 7.6 S.U.; the 90^{th} percentile temperature value was 22.1°C. These values were used to determine the ammonia criteria for all three outfalls. The criteria are presented in Attachment 8.

Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). DEQ Ambient Monitoring data from all monitoring stations from January 1990 through February 2011 was used to determine the average Total Hardness value for watershed VAN-A10R. The average hardness for the watershed is 102.8 mg/L. The hardness-dependent metals criteria shown in Attachment 8 are based on this average value.

Bacteria Criteria:
The Virginia Water Quality Standards at 9VAC25-260-170 A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 ml of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean[1]
Freshwater *E. coli* (N/100 ml)	126

[1]For a minimum of four weekly samples [taken during any calendar month].

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia.

The receiving streams Sugarland Run and Sugarland Run, UT are located within Section 9 of the Potomac Basin. This section has been designated a Class III water with no special standards.

The receiving stream, Old Sugarland Run, UT, is located within Section 8c of the Potomac Basin. This section has been designated a Class III water with a PWS designation. Special Standard PWS designates a public water supply intake. The Board's Water Quality Standards establish numerical standards for specific parameters calculated to protect human health from toxic effects through drinking water and fish consumption. None of these parameters are believed present in the facility's discharge at levels that would cause a violation of the standard.

Both Sugarland Run and Old Sugarland Run are within the Dulles Area Watershed boundary. However, the Dulles Area Watershed Policy is not applicable to this facility, because the discharges are industrial in nature, and not from a sewage treatment plant. Current implementation of the Policy allows the reissuance of this type of permit.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving streams have been classified as Tier 1 based on an evaluation of the critical flows of the receiving streams. The critical flows for the stream are zero and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier 1 since the limits are set to meet the WQS. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the

Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from the permit application and the Discharge Monitoring Reports (DMRs) from January 2011 through December 2013 have been reviewed and determined to be suitable for evaluation. Effluent data were reviewed, and there have been no exceedances of the established limitations.

The following pollutant requires a wasteload allocation analysis for Outfall 001: Total Residual Chlorine. The discharges from all three outfalls are considered to be intermittent in nature; therefore, only acute criteria are considered when developing effluent limitations.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- F = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

The water segments receiving the discharges are considered to have a 7Q10, 30Q10, and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfalls 001 and 002 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Total Residual Chlorine – Outfall 001:

Chlorine is used for disinfection and is potentially in the discharge from Outfall 001 due to the sources listed in the permit application. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.019 mg/L and a daily maximum limit of 0.019 mg/L are proposed for this discharge (Attachment 9).

d) Effluent Limitations and Monitoring, Outfalls 001, 002 and 003 – Conventional and Non-Conventional Pollutants

Outfall 001
No changes to the total suspended solids (TSS) and pH limitations and monitoring frequency are proposed. Total Suspended Solids limitations are based on staff's best professional judgment; these limits are also consistent with the VPDES general permit for potable water treatment plants (9VAC25-860) for water treatment plants using conventional technology. pH limitations are set at the water quality criteria.

As noted in Fact Sheet Section 15, Outfall 001 discharges to a segment of stream that is listed as impaired in the 2012 Integrated Report due to poor health of the benthic macroinvertebrate communities. In support of this recent listing and the development of a benthic TMDL in the future, DEQ shall have the facility monitor for total dissolved solids, conductivity, and nutrients (total phosphorus, nitrate, nitrite and ammonia) at this outfall on a semiannual basis.

Outfall 002
No changes to the total suspended solids (TSS) and pH limitations and monitoring frequency are proposed. Total Suspended Solids limitations are based on staff's best professional judgment; these limits are also consistent with the VPDES general permit for potable water treatment plants (9VAC25-860) for water treatment plants using conventional technology. pH limitations are set at the water quality criteria.

As noted in Fact Sheet Section 15, Outfall 002 discharges to a stream that is listed as impaired in the 2012 Integrated Report due to poor health of the benthic macroinvertebrate communities. In support of this recent listing and the development of a benthic TMDL in the future, DEQ shall have the facility monitor for total dissolved solids, conductivity, and nutrients (total phosphorus, nitrate, nitrite and ammonia) at this outfall on a semiannual basis.

Outfall 003
No changes to the pH limitations or monitoring frequency are proposed. pH limitations are set at the water quality criteria.

e) Effluent Limitations– Federal Effluent Guidelines.

The discharges from this industrial discharge are not covered by effluent guidelines established in 40 CFR.

f) Effluent Annual Average Limitations and Monitoring, Outfalls 001 and 002 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Industrial facilities such as this one were given wasteload allocations based on assumed effluent concentrations for total suspended solids, total nitrogen and total phosphorous.

Monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus are included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay and to check the assumptions that were used to establish the facility's WLAs in the TMDL.

g) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, Total Suspended Solids, and Total Residual Chlorine.

Sample Type is in accordance with the recommendations in the VPDES Permit Manual. Due to the excellent compliance record at the facility, the frequency of sampling was reduced from quarterly to semiannual during the last reissuance and is proposed to continue with this reissuance.
E. coli/Fecal Coliform: The results for Outfalls 001 and 002 for Fecal Coliform were 50 MPN/cmL and 50 MPN/cmL; respectively. These two outfalls are industrial discharges that do not include the discharge of treated municipal sewage or any other likely source of coliforms. It is staff's best professional opinion that the bacteria is due to natural sources (e.g., wildlife), and no limitations are necessary for these discharges.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19.a. Effluent Limitations/Monitoring Requirements: Outfall 001

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/6M	Estimate
TSS (mg/L)	2	30 mg/L	60 mg/L	NA	NA	1/6M	5G/8H
Total Residual Chlorine	3	0.019 mg/L	0.019 mg/L	NA	NA	1/6M	Grab
pH (S.U.)	3	NA	NA	6.0 S.U.	9.0 S.U.	1/6M	Grab
Ammonia as N (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Nitrate+Nitrite (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Kjeldahl Nitrogen (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Nitrogen (mg/L)*	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Phosphorus (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Dissolved Solids (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Conductivity (µmhos/cm)	2, 3	NL	NA	NA	NL	1/6M	5G/8H

The basis for the limitations codes are:
1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
1/6M = Once every six months.

5G/8H = Eight Hour Composite – Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples at equal time intervals for the duration of the discharge if less than 8 hours in length.
Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.
Grab = An individual sample collected over a period of time not to exceed 15-minutes.
* Total Nitrogen = Sum of TKN plus Nitrate+Nitrite
The semiannual monitoring periods shall be January through June and July through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

19.b. Effluent Limitations/Monitoring Requirements: Outfall 002

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/6M	Estimate
TSS (mg/L)	2	30 mg/L	60 mg/L	NA	NA	1/6M	5G/8H
pH (S.U.)	3	NA	NA	6.0 S.U.	9.0 S.U.	1/6M	Grab
Ammonia as N (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Nitrate+Nitrite (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Kjeldahl Nitrogen (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Nitrogen (mg/L)*	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Phosphorus (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Total Dissolved Solids (mg/L)	2, 3	NL	NA	NA	NL	1/6M	5G/8H
Conductivity (µmhos/cm)	2, 3	NL	NA	NA	NL	1/6M	5G/8H

The basis for the limitations codes are:
1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
1/6M = Once every six months

5G/8H = Eight Hour Composite – Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples at equal time intervals for the duration of the discharge if less than 8 hours in length.
Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.
Grab = An individual sample collected over a period of time not to exceed 15-minutes.
* Total Nitrogen = Sum of TKN plus Nitrate+Nitrite
The semiannual monitoring periods shall be January through June and July through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

19.c. Effluent Limitations/Monitoring Requirements: Outfall 003

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/6M	Estimate
pH (S.U.)	3	NA	NA	6.0 S.U.	9.0 S.U.	1/6M	Grab

The basis for the limitations codes are:
1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
1/6M = Once every six months.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.
Grab = An individual sample collected over a period of time not to exceed 15-minutes.

The semiannual monitoring periods shall be January through June and July through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

20. Other Permit Requirements:

a) Part I.B. of the permit contains quantification levels and compliance reporting instructions. 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

b) Notification Levels The permittee shall notify the Department as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(1) One hundred micrograms per liter;

(2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;

(3) Five times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the Board.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(1) Five hundred micrograms per liter;

(2) One milligram per liter for antimony;

(3) Ten times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the Board.

c) Materials Handling/Storage. 9VAC25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.

d) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

e) TMDL Reopener: This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:
   1) No changes are proposed.

b) Monitoring and Effluent Limitations:
   1) Monitoring for Total Dissolved Solids, Conductivity, Ammonia as N, Nitrate+Nitrite, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus was added for Outfall 001.
   2) Monitoring for Total Dissolved Solids, Conductivity, Ammonia as N, Nitrate+Nitrite, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus was added for Outfall 002.

23. Variances/Alternate Limits or Conditions:

The permittee requested and staff approved a waiver from some of the monitoring requirements found in Form 2C and Form 2F. For Form 2C for Outfalls 001 and 002, the facility requested a waiver from the Section V monitoring for Part C and for all the Part B parameters except for total residual chlorine, fecal coliforms, and total phosphorus. For Form 2C for Outfall 003, the facility requested a waiver from the Section V monitoring for Parts A, B, and C. For Form 2F, the facility requested a waiver from the storm event monitoring requirements. DEQ granted these waivers for these waivers, but indicated that nutrient monitoring might be included due to TMDL considerations.

24. Public Notice Information:

First Public Notice Date: April 17, 2014 Second Public Notice Date: April 24, 2014

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3834, Alison.Thompson@deq.virginia.gov. See Attachment 10 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. Additional Comments:
Previous Board Action(s): None.

Staff Comments: None.

Public Comment: The Virginia Department of Conservation and Recreation (DCR) requested coordination for this reissuance. DEQ submitted the project via the DCR- Natural Heritage Program web based program on May 31, 2013. DCR responded by letter dated June 26, 2013. There was one natural heritage concern for the site – Wood Turtle. DCR's response can be found as Attachment 11. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge.

Attachments to the Fact Sheet
VA0087874
Corbalis WTP

Attachment 1	Flow Frequency Determination
Attachment 2	Industrial Rating Worksheet
Attachment 3	Facility Schematic
Attachment 4	Topographic Map
Attachment 5	Material Storage
Attachment 6	DEQ Compliance Site Inspection
Attachment 7	DEQ Planning Group Planning Statement
Attachment 8	Water Quality Criteria/Wasteload Allocations
Attachment 9	Statistical Evaluation for Total Residual Chlorine (Outfall 001)
Attachment 10	Public Notice
Attachment 11	DCR Coordination Response

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
FCWA Corbalis WTP - VA#0087874

TO: D. Russell Batchelor., NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: January 28, 1999

COPIES: Ron Gregory, Charles Martin, File

This memo supersedes Ed Morrow's January 26, 1993 memo to Raymond Jay concerning the subject VPDES permit.

The FCWA Corbalis WTP discharges to the Sugerland Run (001), an unnamed tributary to Sugarland Run (002), and an unnamed tributary to Old Sugarland Run (003). All of the outfalls are located near Reston, VA. Stream flow frequencies are required at these sites for use by the permit writer in developing effluent limitations for the VPDES permit.

Review of the USGS Vienna Quadrangle topographic map shows that outfall 001 discharges to a dry ditch which drains to the Sugarland Run and outfall 002 discharges to and intermittent stream. The flow frequencies for intermittent streams and dry ditches are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and harmonic mean. Outfall 003 is located on a perennial unnamed tributary of Old Sugarland Run. Stream flow frequencies for this site are provided below.

The VDEQ has operated a continuous record gage on the Difficult Run near Great Falls, VA (#01646000) since 1935. The gage is located at the Route 193 bridge, in Fairfax County, VA. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs which may lie upstream.

Difficult Run near Great Falls, VA (#01646000):

Drainage Area = 57.9 mi^2

1Q10 = 2.3 cfs	High Flow 1Q10 = 11 cfs
7Q10 = 2.9 cfs	High Flow 7Q10 = 14 cfs
30Q5 = 5.0 cfs	HM = 23 cfs

UT to Old Sugarland Run at outfall 003 discharge point:

Drainage Area = 0.34 mi^2

1Q10 = 0.014 cfs	High Flow 1Q10 = 0.065 cfs
7Q10 = 0.017 cfs	High Flow 7Q10 = 0.082 cfs
30Q5 = 0.029 cfs	HM = 0.135 cfs

All flows should be 0.0 mgd. It is a dry stream during dry weather.

S.C. Gray 10-19-99

The high flow months are January through June.

If you have any questions concerning this analysis, please let me know.

NPDES PERMIT RATING WORK SHEET

[ ] Regular Addition
[X] Ratings Confirmation
[ ] Score change, but no status Change
[ ] Deletion

VPDES NO. : VA0087874

Facility Name: Fairfax County Water Authority – Corbalis WTP
City / County: Fairfax County
Receiving Water: Sugarland Run, UT-Sugarland Run, UT-Old Sugarland Run
Reach Number:

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power Plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rater

[ ] Yes; score is 600 (stop here) [X] NO; (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

[ ] YES; score is 700 (stop here)
[X] NO; (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary Sic Code: 4941 Other Sic Codes: _____ _____ _____

Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
[ ] No process waste streams	0	0	[ ] 3.	3	15	[X] 7.	7	35
[ ] 1.	1	5	[ ] 4.	4	20	[ ] 8.	8	40
[ ] 2.	2	10	[ ] 5.	5	25	[ ] 9.	9	45
			[ ] 6.	6	30	[ ] 10.	10	50

Code Number Checked: 7

Total Points Factor 1: 35

FACTOR 2: Flow/Stream Flow Volume (Complete either Section A or Section B; check only one)

Section A – Wastewater Flow Only considered

Wastewater Type (see Instructions)			Code	Points
Type I:	Flow < 5 MGD	[ ]	11	0
	Flow 5 to 10 MGD	[ ]	12	10
	Flow > 10 to 50 MGD	[ ]	13	20
	Flow > 50 MGD	[ ]	14	30
Type II:	Flow < 1 MGD	[X]	21	10
	Flow 1 to 5 MGD	[ ]	22	20
	Flow > 5 to 10 MGD	[ ]	23	30
	Flow > 10 MGD	[ ]	24	50
Type III:	Flow < 1 MGD	[ ]	31	0
	Flow 1 to 5 MGD	[ ]	32	10
	Flow > 5 to 10 MGD	[ ]	33	20
	Flow > 10 MGD	[ ]	34	30

Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	[ ]	41	0
	10 % to < 50 %	[ ]	42	10
	> 50%	[ ]	43	20
Type II:	< 10 %	[ ]	51	0
	10 % to < 50 %	[ ]	52	20
	> 50 %	[ ]	53	30

Code Checked from Section A or B: 21

Total Points Factor 2: 10

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)

		Code	Points
☐	< 100 lbs/day	1	0
☐	100 to 1000 lbs/day	2	5
☐	> 1000 to 3000 lbs/day	3	15
☐	> 3000 lbs/day	4	20

Code Number Checked: NA

Points Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

		Code	Points
X	< 100 lbs/day	1	0
☐	100 to 1000 lbs/day	2	5
☐	> 1000 to 5000 lbs/day	3	15
☐	> 5000 lbs/day	4	20

Code Number Checked: 1

Points Scored: 0

C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: _____

Permit Limits: (check one)

	Nitrogen Equivalent	Code	Points
☐	< 300 lbs/day	1	0
☐	300 to 1000 lbs/day	2	5
☐	> 1000 to 3000 lbs/day	3	15
☐	> 3000 lbs/day	4	20

Code Number Checked: NA

Points Scored: 0

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

X YES; (If yes, check toxicity potential number below)

☐ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No process waste streams	0	0	☐ 3.	3	0	X 7.	7	15
☐ 1.	1	0	☐ 4.	4	0	☐ 8.	8	20
☐ 2.	2	0	☐ 5.	5	5	☐ 9.	9	25
			☐ 6.	6	10	☐ 10.	10	30

Code Number Checked: 7

Total Points Factor 4: 15

FACTOR 5: Water Quality Factors

A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been to the discharge*

		Code	Points
[X]	YES	1	10
[ ]	NO	2	0

B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

		Code	Points
[X]	YES	1	0
[ ]	NO	2	5

C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

		Code	Points
[ ]	YES	1	10
[X]	NO	2	0

Code Number Checked: A 1 B 1 C 2

Points Factor 5: A 10 + B 0 + C 0 = **10**

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from factor 2) 21

Check appropriate facility HPRI code (from PCS):

	HPRI#	Code	HPRI Score
[ ]	1	1	20
[ ]	2	2	0
[ ]	3	3	30
[X]	4	4	0
[ ]	5	5	20

Enter the multiplication factor that corresponds to the flow code: 0.10

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI code checked : 4

Base Score (HPRI Score): 0 X (Multiplication Factor) 0.10 = 0

B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points	
[ ]	1	10	
[X]	2	0	N/A

C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

	Code	Points	
[ ]	1	10	
[X]	2	0	N/A

Code Number Checked: A 4 B 2 C 2

Points Factor 6: A 0 + B 0 + C 0 = **0**

NPDES PERMIT RATING WORK SHEET

VA0087874

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	35
2	Flows / Streamflow Volume	10
3	Conventional Pollutants	0
4	Public Health Impacts	15
5	Water Quality Factors	10
6	Proximity to Near Coastal Waters	0
	TOTAL (Factors 1 through 6)	70

S1. Is the total score equal to or grater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

☐ YES; (Add 500 points to the above score and provide reason below:

Reason: _____

NEW SCORE : 70

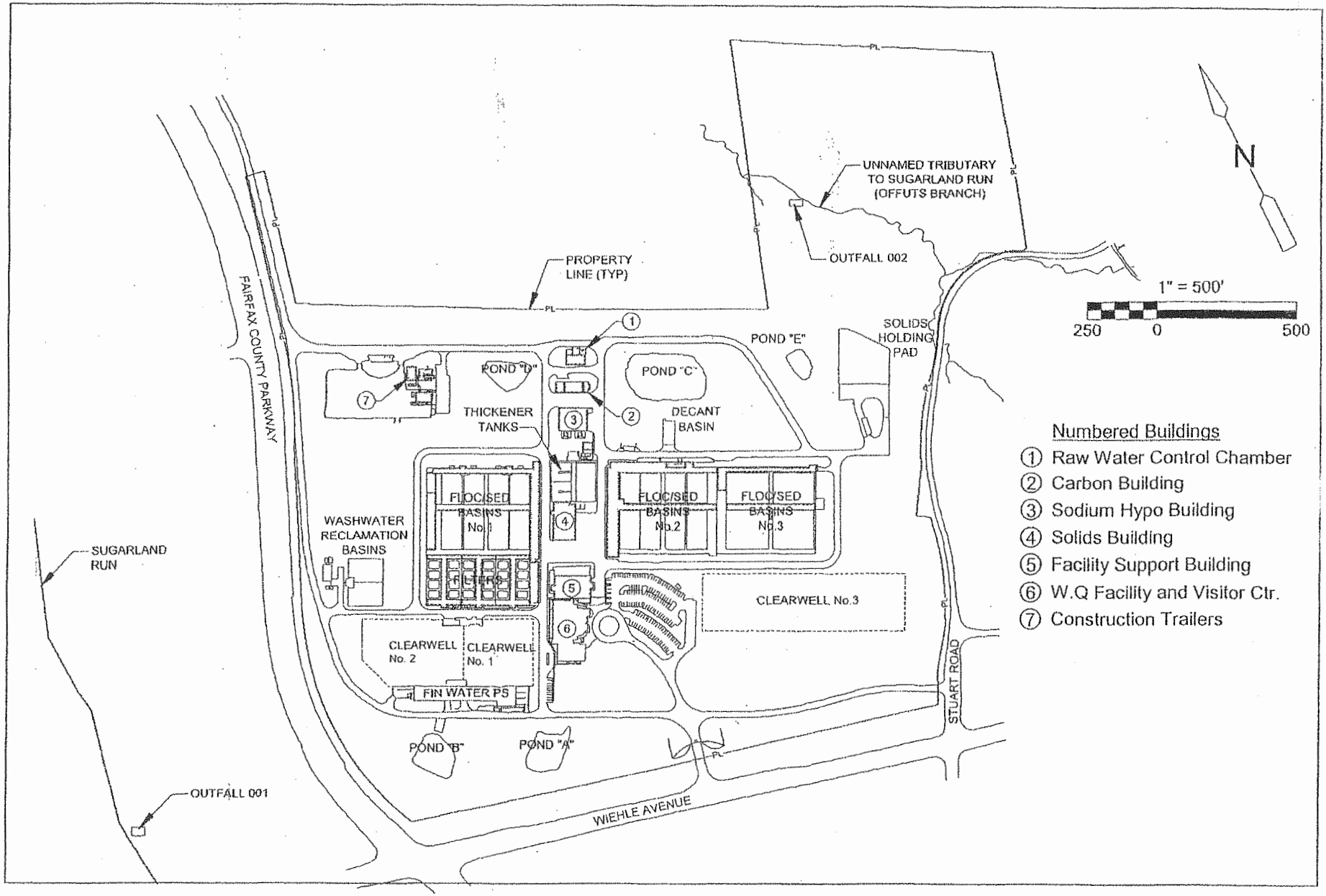
OLD SCORE : 70

Permit Reviewer's Name : Alison Thompson

Phone Number: (703)583-3834

Date: 3/17/14

Attachment 3



CDM

Figure 1-A
CORBALIS WTP OVERALL SITE PLAN
SHOWING BUILDINGS, ROADS AND PARKING AREAS IN VICINITY OF OUTFALLS 001 AND 002

Attachment 4

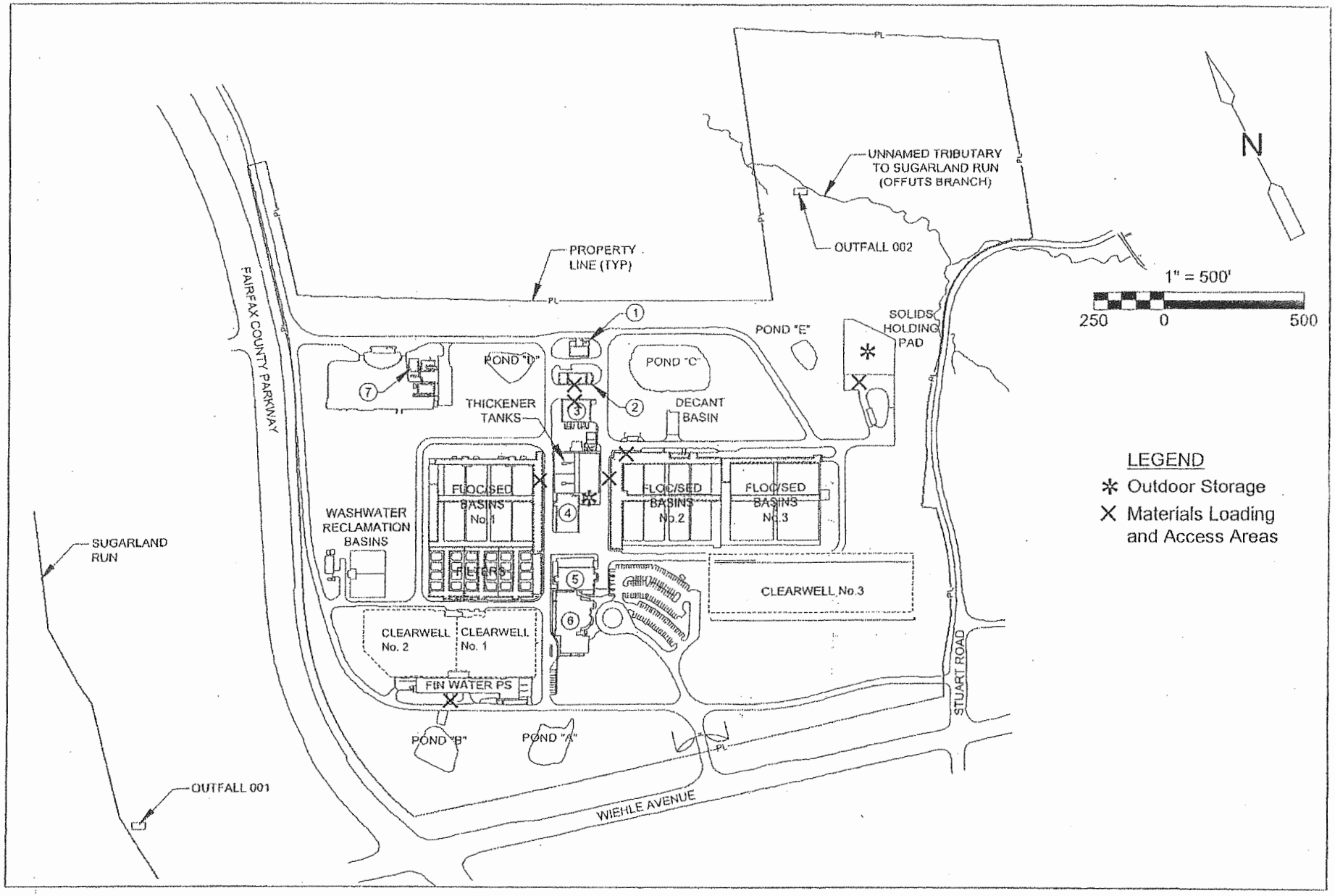
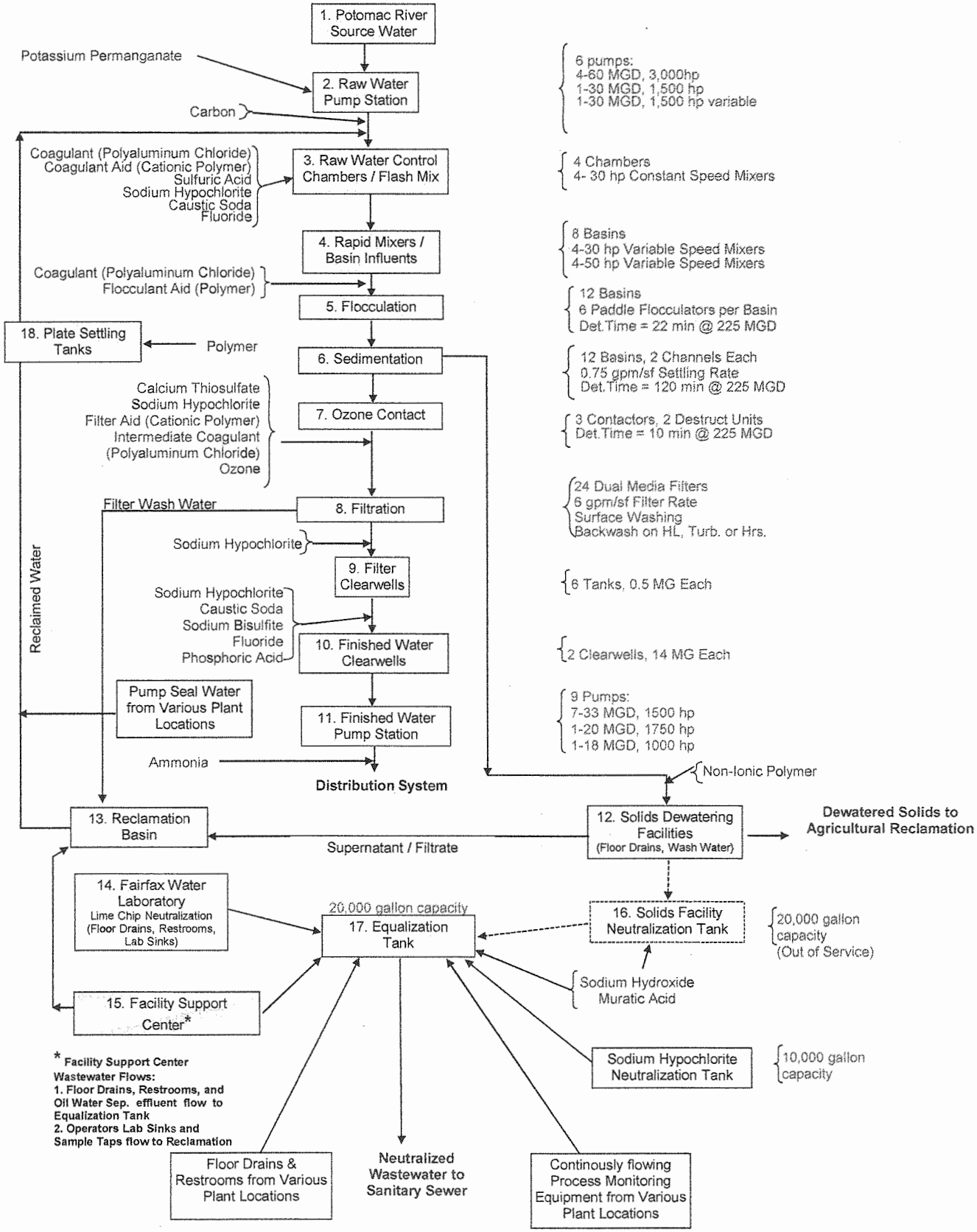
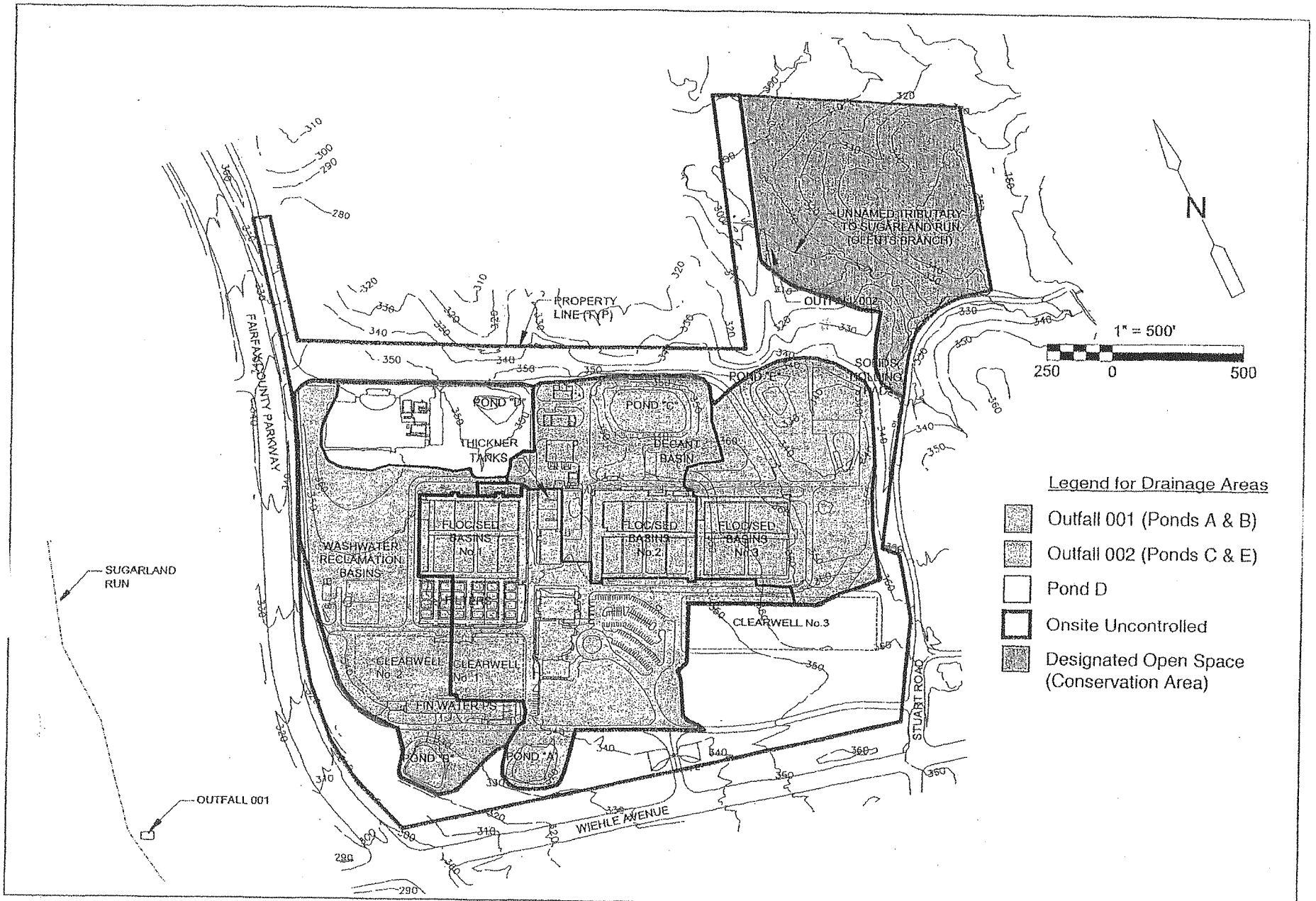


Figure 1-C
CORBALIS WTP OUTDOOR STORAGE AND MATERIALS LOADING
AND ACCESS AREAS IN VICINITY OF OUTFALLS 001 AND 002

Fairfax Water Corbalis WTP Process Flow
Fairfax County Stormwater Permit Application
Figure 3, Corbalis WTP Flow Diagram

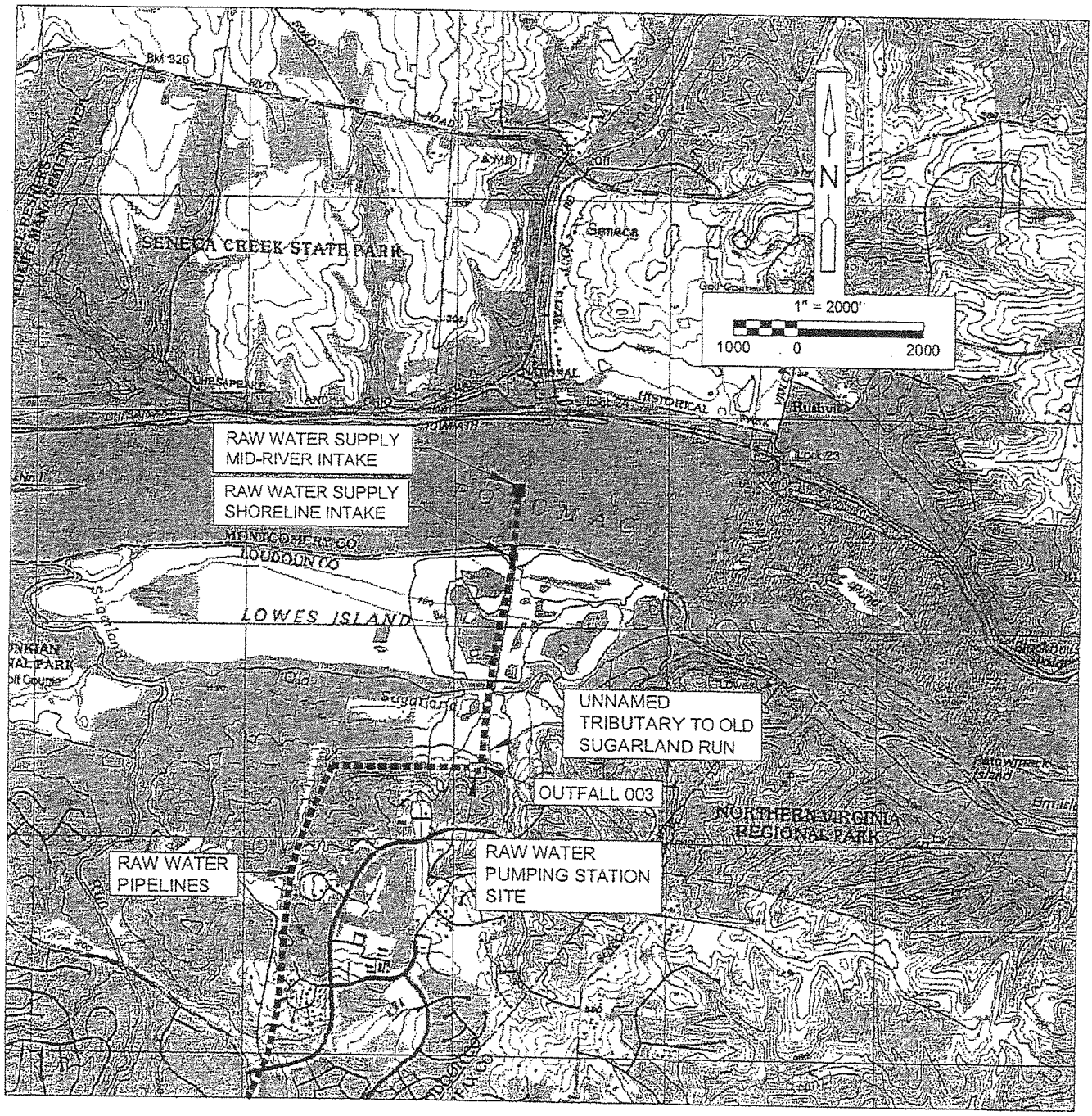


Attachment 4



CDM

Figure 1-B
CORBALIS WATER TREATMENT PLANT
DRAINAGE AREAS FOR OUTFALLS 001 AND 002



CDM

Figure 2
TOPOGRAPHIC MAP SHOWING RAW WATER PUMPING STATION SITE AND OUTFALL 003

CORBALIS WATER TREATMENT PLANT
VPDES PERMIT NO. VA0087874
PERMIT RENEWAL APPLICATION

TABLE NO.1

DESCRIPTION OF STORAGE AND CONTAINMENT PRACTICES FOR CHEMICALS AND FUELS STORED ON-SITE

Description	Storage Capacity
1. Liquid chemicals stored inside buildings in contained areas with drains to sanitary sewer	
Sodium Hypochlorite (6%)	220,000 gallons
Aqueous Ammonia (19%)	21,890 gallons
Polyaluminum Chloride	118,430 gallons
Aluminum Sulfate	14,170 gallons
Caustic Soda (50%)	45,000 gallons
Phosphoric Acid	11,226 gallons
Hydrofluosilic Acid (25%)	12,880 gallons
Muriatic Acid	4,500 gallons
Sulfuric Acid (93%)	12,000 gallons
Calcium Thiosulfate	7,050 gallons
Polymers	12,050 gallons
2. Liquid chemicals stored outside in contained areas with drains to storm sewer (Tributary to Pond C)	
Muriatic Acid	7,800 gallons
3. Dry chemicals stored inside buildings with drains to sanitary sewer	
Pebble Quick Lime	405 tons
Perlite	31 tons
Sodium Bisulfite	1,600 gallons
Potassium Permanganate	29 tons
4. Powdered Activated Carbon Slurry Stored Inside Building with Drain and Overflow to Storm Sewer (Tributary to Pond C)	60,000 pounds
5. Fuel Stored in Double Walled Tanks	
Diesel	1,000 gallons (above grade)
Gasoline	2,000 gallons (above grade)
Heating Oil No. 2	40,000 gallons (below grade)
Waste Oil	550 gallons (below grade)
Sand/Oil Interceptor	1,000 gallons (below grade)

April 18, 2008

Mr. Joel Thompson
Director of Water Production
Fairfax Water Authority
8570 Executive Park Avenue
Fairfax, VA 22031-2218

Re: Corbalis Water Treatment Plant, Permit VA0087874

Dear Mr. Thompson:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at the Corbalis facility on April 7, 2008. The compliance staff would like to thank your staff for their time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. The facility had **Deficiencies** for the laboratory inspection. Please note the requirements and recommendations addressed in the technical summary. Please submit in writing a progress report to this office by May 17, 2008 for the items addressed in the summary. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you chose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Virginia Regional Office at (703) 583-3833 or by E-mail at twnelson@deq.virginia.gov.

Sincerely,

Terry Nelson
Environmental Specialist II

cc: Permits / DMR File
Compliance Manager
Compliance Auditor
Compliance Inspector
OWCP – (SGStell)

No problems were identified during November 2004 inspection.

Summary for Current Inspection

Comments:

- There is a refueling location adjacent to Detention Pond C.
- The maintenance shop located near the refueling area has outdoor trench drains to collect stormwater.
- The trench drains inside the maintenance shop are connected to sanitary sewer.
- No problems were observed with Ponds A, C, or D.
- Pond C is currently drained to allow for concrete lining.
- Pond B had some trash below several inlets and animal burrows on the interior side.
- Water from Pond E had significant suspended sediment due to adjacent construction work.
- A small maintenance storage shed near Pond E had a battery stored outside and multiple empty barrels.
- No problems were observed at the outfalls.

Recommendations for action:

1. **Please have all trash removed from the stormwater detention ponds.**
2. **DEQ recommends a weekly inspection of the ponds to remove trash.**
3. **Please review the policy for inspecting the pond banks for animal burrows.**
4. **Please remind staff that empty barrels should be capped or stored upside down to prevent stormwater accumulating inside them.**
5. **Vehicle batteries should be stored under cover or preferably inside a building.**
6. **Fairfax Water Authority staff are reminded they are required to report to DEQ any stormwater or unusual discharge not leaving the property through a permitted outfall.**

LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME: FWA - Corbalis	FACILITY NO: VA0087874	INSPECTION DATE: 04/07/2008
(X) Deficiencies	( ) No Deficiencies	

LABORATORY RECORDS

The Laboratory Records section had **No Deficiencies.**

GENERAL SAMPLING AND ANALYSIS

The General Sampling and Analysis section had **No Deficiencies.**

LABORATORY EQUIPMENT

The Laboratory Equipment section had **No Deficiencies.**

Recommendation:

- Please remember to verify all thermometers against a NIST certified thermometer every 12 months. One thermometer was observed to be 2 weeks overdue for verification.

INDIVIDUAL PARAMETERS

Total Residual Chlorine (TRC)

The analysis for the parameter of TRC had **No Deficiencies.**

pH

The analysis for the parameter of pH had **Deficiencies.**

1. **Holding times can not be verified without sample collection and analysis times.**
2. **No duplicate analysis has been performed to date. If citing 18th or 19th Edition, one sample per outfall should be tested each year.**

Total Suspended Solids (TSS)

The analysis for the parameter of TSS had **No Deficiencies.**

COMMENTS

The facility staff should check the DEQ website at http://www.deq.virginia.gov/vpdes/checklist.html and download the most recent inspection check sheets to keep up to date with changes in minimum laboratory requirements.

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0087874	**05/11/2004**		**05/11/2009**

Facility Name	Address	Telephone Number
FWA- Corbalis	**1295 Fred Morin Road Herndon, VA**	**703-289-6567**
Owner Name	Address	Telephone Number
Fairfax Water Authority	**8570 Executive Park Avenue Fairfax, VA**	**703-698-5600**
Responsible Official	Title	Telephone Number
Joel Thompson	**Director of Water Production**	**703-698-5600**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Doug Grimes	**N.A.**	**703-289-6567**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal		Minor		Minor	**X**	Secondary	

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**NA**
Population Served	**Unknown**
Connections Served	**Unknown**
BOD_5	
TSS	

EFFLUENT LIMITS:

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow (MGD)		**NL**	**NL**				
pH (S.U.)	**6.0**		**9.0**				
TSS (mg/L)		**30**	**60**				
Cl_2 Inst Residual Max (mg/L)		**0.019**	**0.019**				

Receiving Stream	**Sugarland Run**
Basin	**Potomac**
Discharge Point (LAT)	**38° 59' 30" N**
Discharge Point (LONG)	**77° 22' 00" W**

VPDES NO. **VA0087874**

REV 5/00

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **April 7, 2008**

Date form completed: **April 15, 2008**

Inspection by: **Terry Nelson**

Inspection agency: **DEQ NRO**

Time spent: **9 hours**

Announced: **No**

Reviewed by:

Scheduled: **Yes**

Present at inspection: **Wilamena Harback, VA DEQ; Doug Grimes, FWA**

TYPE OF FACILITY:

	Domestic	**Industrial**	
[ ] Federal	[ ] Major	[ ] Major	[ ] Primary
[ ] Nonfederal	[ ] Minor	[**X**] Minor	[ ] Secondary

Type of inspection:

[**X**] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **11/16/2004**
Agency: **DEQ NRO**

Population served: approx. **Unknown**

Connections served: approx. **Unknown**

Quarter average: (Effluent) **January - March 2008**
Flow: **0.142** MGD pH: **7.4** S.U. TSS: **1** mg/L

DATA VERIFIED IN PREFACE [**X**] Updated [ ] No changes

Has there been any new construction? [**X**] Yes [ ] No

If yes, were plans and specifications approved? [**X**] Yes [ ] No [ ] N/A

DEQ approval date: **Approved by VDH**

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: **Regulated by VDH**

2. Hours per day plant is manned: **24 hours per day / 7 days per week**

3. Describe adequacy of staffing. [ ] Good [**X**] Average [ ] Poor

4. Does the plant have an established program for training personnel? [**X**] Yes [ ] No

5. Describe the adequacy of the training program. [**X**] Good [ ] Average [ ] Poor

6. Are preventive maintenance tasks scheduled? [**X**] Yes [ ] No

7. Describe the adequacy of maintenance. [**X**] Good [ ] Average [ ] Poor*

8. Does the plant experience any organic/hydraulic overloading? [ ] Yes [**X**] No
   If yes, identify cause and impact on plant:

9. Any bypassing since last inspection? [ ] Yes [**X**] No

10. Is the standby electric generator operational? [ ] Yes [ ] No* [**X**] N/A

11. Is the STP alarm system operational? [ ] Yes [ ] No* [**X**] N/A

12. How often is the standby generator exercised? **N/A**
    Power Transfer Switch? **N/A**
    Alarm System? **N/A**

13. When was the cross connection control device last tested on the potable water service? **09/04/07**

14. Is sludge being disposed in accordance with the approved sludge disposal plan?
    [**X**] Yes [ ] No [ ] N/A

15. Is septage received by the facility? [ ] Yes [**X**] No
    Is septage loading controlled? [ ] Yes [ ] No
    Are records maintained? [ ] Yes [ ] No

16. Overall appearance of facility: [**X**] Good [ ] Average [ ] Poor

Comments:

12 No generators related to stormwater permit, although site has generators for water production.
14 Sludge is dewatered, stored on a pad, and hauled by contractor for land application.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[**X**] Yes	[ ] No	[ ] N/A
Instrument maintenance and calibration	[**X**] Yes	[ ] No	[ ] N/A
Mechanical equipment maintenance	[**X**] Yes	[ ] No	[ ] N/A
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[**X**] N/A

2. What does the operational log contain?

[**X**] Visual observations
[**X**] Laboratory results
[ ] Control calculations
[**X**] Flow measurement
[**X**] Process adjustments
[**X**] Other (specify)

Comments: **Log includes dosage rates for caustic soda, ozone, polyaluminum chloride (PACL)**

3. What do the mechanical equipment records contain?

[**X**] As built plans and specs
[**X**] Manufacturers instructions
[**X**] Lubrication schedules
[**X**] Spare parts inventory
[**X**] Equipment/parts suppliers
[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain? (Municipal Only)

[ ] Waste characteristics
[ ] Impact on plant
[ ] Locations and discharge types
[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[**X**] Equipment maintenance records
[ ] Industrial contributor records
[**X**] Sampling and testing records
[**X**] Operational Log
[**X**] Instrumentation records

6. Records not normally available to plant personnel and their location: **None**

7. Were the records reviewed during the inspection? [**X**] Yes [ ] No

8. Are the records adequate and the O & M Manual current? [**X**] Yes [ ] No

9. Are the records maintained for the required 3-year time period? [**X**] Yes [ ] No

Comments:

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [**X**] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [ ] Yes [**X**] No* [ ] N/A
5. Are composite samples refrigerated during collection? [**X**] Yes [ ] No* [ ] N/A
6. Does plant maintain required records of sampling? [**X**] Yes [ ] No*
7. Does plant run operational control tests? [**X**] Yes [ ] No

Comments: **During a 5 hour period, one 1 liter sample is collected hourly. Using a graduated cylinder, 400 mL of each sample are poured off into a composite to yield a 2 liter composite sample.**

(D) TESTING

1. Who performs the testing? [ ] Plant [**X**] Central Lab [ ] Commercial Lab

Name: **Fairfax Water Authority's central lab is located at the Corbalis facility.**

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **Amperometric Titration**
3. Does plant appear to have sufficient equipment to perform required tests? [**X**] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [**X**] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [**X**] N/A
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [**X**] N/A
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [**X**] N/A

Comments:

Overview

Wastewater Treatment Description:

The Corbalis Water Treatment Plant is rated for 150 MGD and produces potable water for Fairfax County. The plant is operated by the Fairfax Water Authority (FWA). Water from the Potomac River is screened and pumped 7 miles to the Raw Water Control Chamber. In case of an emergency, the chamber has an overflow weir that would allow the river water to flow into Detention Pond C. Depending on the raw water quality, operators can add coagulant, coagulant aid, sulfuric acid, fluoride, chlorine gas, and/or caustic soda in this chamber. The raw water enters a rapid mix chamber and then into the flocculation and sedimentation basins. The clarified water flows into the ozonation chamber and is then filtered using granular activated carbon capped multimedia filters. Filters are backwashed as necessary. The backwash water is piped into two reclamation basins for settling, and the clarified backwash water is recycled to the raw water line and through the treatment process. The filtered water is chlorinated with chlorine gas from 1 ton cylinders and stored in one of two clearwells with 28 million gallon combined storage. As part of the recent construction, a new clearwell was added and the 2 original clearwells were combined. The operators can also add caustic soda, fluoride, and zinc orthophosphate prior to the clearwells. FWA adds ammonia prior to distribution to create a chloramines residual in finished water. In the spring, ammonia addition is halted; creating a free chlorine residual in the finished water during the annual distribution system flushing.

An expansion of the treatment facilities began in summer 2004 with completion expected in spring 2008. The final production capacity of the facility will be 225 MGD. Part of the upgrade will include a change in disinfection methods by installing sodium hypochlorite tanks and appropriate pumps and discontinuing the use of the 1 ton chlorine gas cylinders.

Discharges are from Outfalls 001, 002, and 003. The facility has provided information that indicates that for Outfall 001, the main flow contribution is from the building underdrains with some stormwater. For Outfall 002, the main flow contributions include thickener supernatant and filtrate, drains for the backwash water reclamation basins, and thickener drains. Other possible sources to these outfalls are estimated to be on an infrequent/emergency basis. Outfall 003 receives backwash water from the raw water screens at the Potomac River. Screened river water is used to backwash the screens when they become clogged.

Stormwater from construction activities discharges from Outfalls 001 and 002. For the purposes of monitoring stormwater discharges, Outfall 001 is labeled Outfall 901, and Outfall 002 is labeled Outfall 902.

Solids Treatment and Disposal Methods:

Solids are generated from filter backwash activities and from the water treatment sedimentation basins.

When the multi-media filters are backwashed, the solids laden water is piped to two reclamation basins. Once the solids settle, the backwash water is recycled through the water treatment process. The solids generated are pumped to Detention Pond C every 2-3 months. Pond C discharges to Outfall 002. Pond C is currently drained and being lined with concrete.

Polyaluminum chloride (PACL) is added to the raw water in a rapid mix chamber. The solids settle in the sedimentation basins and the solids are continuously delivered to a solids channel. The solids channel has scrapers running perpendicular to the sedimentation basin channels. The solids are pumped to gravity thickeners and are then sent to the 2 plate frame filter presses (124 plates each). The volume of wet tons produced is dependent on the water production rate and the raw water turbidity. The pressed solids are stored on a concrete pad until the contractor hauls them to permitted land application sites. Any runoff from the concrete pad flows to Pond E and eventually to Outfall 002.

UNIT PROCESS: Effluent/Plant Outfall 001

1. Type Outfall [**X**] Shore based [ ] Submerged

2. Type if shore based: [**X**] Wingwall [ ] Headwall [ ] Rip Rap

3. Flapper valve: [ ] Yes [**X**] No [ ] N/A

4. Erosion of bank: [ ] Yes [**X**] No [ ] N/A

5. Effluent plume visible? [ ] Yes* [**X**] No

6. Condition of outfall and supporting structures: [**X**] Good [ ] Fair [ ] Poor*

7. Final effluent, evidence of following problems:

a.	oil sheen	[ ] Yes*	[**X**] No
b.	grease	[ ] Yes*	[**X**] No
c.	sludge bar	[ ] Yes*	[**X**] No
d.	turbid effluent	[ ] Yes*	[**X**] No
e.	visible foam	[ ] Yes*	[**X**] No
f.	unusual color	[ ] Yes*	[**X**] No

Comments:

- **Detention Ponds A and B discharge to this outfall.**
- **Detention Pond B had animal burrows in the banks and trash below several inlet pipes.**
- **The samples are collected and flows estimated at the end of the discharge pipe.**
- **An in-situ pH reading of 6.60 SU @9.8° C was recorded at 0950 hours.**
- **A chlorine residual of 0.03 mg/L (< QL) was measured at 0958 hours.**

UNIT PROCESS: Effluent/Plant Outfall 002

1. Type Outfall [**X**] Shore based [ ] Submerged
2. Type if shore based: [**X**] Wingwall [ ] Headwall [ ] Rip Rap
3. Flapper valve: [ ] Yes [**X**] No [ ] N/A
4. Erosion of bank: [ ] Yes [**X**] No [ ] N/A
5. Effluent plume visible? [ ] Yes* [**X**] No
6. Condition of outfall and supporting structures: [**X**] Good [ ] Fair [ ] Poor*
7. Final effluent, evidence of following problems:

a.	oil sheen	[ ] Yes*	[**X**] No
b.	grease	[ ] Yes*	[**X**] No
c.	sludge bar	[ ] Yes*	[**X**] No
d.	turbid effluent	[ ] Yes*	[**X**] No
e.	visible foam	[ ] Yes*	[**X**] No
f.	unusual color	[ ] Yes*	[**X**] No

Comments:

- **Detention Ponds C and E discharge to this oufall.**
- **Detention Pond D is a grassy indentation near Pond C.**
- **Detention Pond C is currently drained to allow concrete lining of the basin.**
- **The samples are collected and flows estimated at the end of the discharge pipe.**

UNIT PROCESS: Effluent/Plant Outfall 003

1. Type Outfall [**X**] Shore based [ ] Submerged
2. Type if shore based: [**X**] Wingwall [ ] Headwall [ ] Rip Rap
3. Flapper valve: [ ] Yes [**X**] No [ ] N/A
4. Erosion of bank: [ ] Yes [**X**] No [ ] N/A
5. Effluent plume visible? [ ] Yes* [**X**] No
6. Condition of outfall and supporting structures: [**X**] Good [ ] Fair [ ] Poor*
7. Final effluent, evidence of following problems:

a. oil sheen	[ ] Yes*	[**X**] No
b. grease	[ ] Yes*	[**X**] No
c. sludge bar	[ ] Yes*	[**X**] No
d. turbid effluent	[ ] Yes*	[**X**] No
e. visible foam	[ ] Yes*	[**X**] No
f. unusual color	[ ] Yes*	[**X**] No

Comments:

- **Outfall 003 is the backwash from traveling screens.**
- **This outfall is located at the intake station located off Seneca Road.**

DEPARTM[illegible]T OF ENVIRONMENTAL QUALITY - W[illegible]ER DIVISION
LABORATORY INSPECTION REPORT
10/01

FACILITY NO:	INSPECTION DATE:	PREVIOUS INSP. DATE:	PREVIOUS EVALUATION:	TIME SPENT:
VA0087874	04/07/2008	11/16/2004	Deficiencies	2 hours

NAME/ADDRESS OF FACILITY:	FACILITY CLASS:	FACILITY TYPE:	UNANNOUNCED INSPECTION?
FCWA Corbalis WTP 1295 Fred Morin Road Herndon, VA 20170	( ) MAJOR (X) MINOR ( ) SMALL ( ) VPA/NDC	( ) MUNICIPAL (X) INDUSTRIAL ( ) FEDERAL ( ) COMMERCIAL LAB	(X) YES ( ) NO FY-SCHEDULED INSPECTION? (X) YES ( ) NO

INSPECTOR(S):	REVIEWERS:	PRESENT AT INSPECTION:
Terry Nelson, Wilamena Harback		Melissa Billman, Craig Rice

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
LABORATORY RECORDS		X
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
pH ANALYSIS PROCEDURES	X	
TOTAL RESIDUAL CHLORINE ANALYSIS PROCEDURES		X
TOTAL SUSPENDED SOLIDS		X

QUALITY ASSURANCE/QUALITY CONTROL

Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
Y	REPLICATE SAMPLES	TSS	Each Analysis
N	SPIKED SAMPLES		
N	STANDARD SAMPLES		
N	SPLIT SAMPLES		
Y	SAMPLE BLANKS	TSS	Each Analysis
N	OTHER		
N	EPA-DMR QA DATA?	RATING: ( ) No Deficiency ( ) Deficiency ( ) N/A	
N	QC SAMPLES PROVIDED?	RATING: ( ) No Deficiency ( ) Deficiency ( ) N/A	

FACILITY #: **VA0087874**

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE		CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
X	SAMPLE LOCATION	X	TEST METHOD		INSTRUMENT MAINTENANCE
					CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

X	SAMPLING SCHEDULES	X	CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: **January – March 2008**	X		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	X		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	X		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB:			X

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	X		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	X		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			X
ARE ANALYTICAL BALANCE(S) ADEQUATE?	X		

ANALYST:	**Jim Miller**	VPDES NO	**VA0087874**

Parameter: Hydrogen Ion (pH)
Method: Electrometric
01/08

METHOD OF ANALYSIS

X	18th Edition of Standard Methods-4500-H-B
	21st or On-Line Edition of Standard Methods-4500-H-B (00)

	pH is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be ± 0.1 SU of the known concentration of the sample. [SM 1020 B.1]	**X**	
2)	Is the electrode in good condition (no chloride precipitate, etc.)? [2.b/c and 5.b]	**X**	
3)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	**X**	
4)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] NOTE: Follow manufacturer's instructions.	**X**	
5)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should by within ± 0.1 SU. [4.a]	**X**	
6)	Do the buffer solutions appear to be free of contamination or growths? [3.1]	**X**	
7)	Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [3.a]	**X**	
8)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	**NA**	
9)	For meters with ATC that also have temperature display, was the thermometer calibrated annually? [SM2550 B.1]	**X**	
10)	Is the temperature of buffer solutions and samples recorded when determining pH? [4.a]	**X**	
11)	Is sample analyzed within 15 minutes of collection? [40 CFR 136.6]	**See notes**	
12)	Was the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinse solution)? [4.a]	**X**	
13)	Is the sample stirred gently at a constant speed during measurement? [4.b]	**X**	
14)	Does the meter hold a steady reading after reaching equilibrium? [4.b]	**X**	
15)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or daily for 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.		**X**
16)	Is pH of duplicate samples within 0.1 SU of the original sample? [Part 1020]		**X**
17)	Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]		**X**

COMMENTS:	
PROBLEMS:	**11. Holding times can not be verified without sample collection and analysis times.** **15. No duplicate analysis has been performed to date. If citing 18th or 19th Edition, one sample per outfall should be tested each year.**

ANALYST:	**Jim Miller**	VPDES NO	**VA0087874**

Parameter: Total Residual Chlorine
Method: Amperometric Titration (Direct)
04/01

METHOD OF ANALYSIS:

X	18th EDITION OF STANDARD METHODS-4500-CL D
	EPA METHODS FOR CHEMICAL ANALYSIS-330.1
	ASTM D1253 - 86(92)

		Y	N
1)	Is PAO normality 0.00564N? [SM Cl C.3.a;330.1-5.1]	X	
2)	Are reagents free of contamination or growths? [Permit]	X	
3)	Is KI solution discarded when it turns yellow? [SM-3.c; 330.1-5.3]	X	
4)	Is the pH of the acetate buffer solution 4? [SM-3.d; 330.1-5.5]	X	
5)	Are reagents within their indicated shelf lives? [Permit]	X	
6)	Is sample volume 200 mL for chlorine residual up to 2 mg/L; 100 mL or proportionately less diluted up to 200 mL for chlorine residuals in excess of 2 mg/L? [SM-4.a; 330.1-6.1]	X	
7)	Is at least 1 mL KI solution added? [SM-4.c; 330.1-6.3]	X	
8)	Is at least 1 mL acetate buffer added after KI solution? [SM-4.c; 330.1-6.4]	X	
9)	Is titrant added in progressively smaller increments until all needle movement ceases? [SM-4.c; 330.1-6.6]	X	
10)	Is last increment of titrant that causes no needle response subtracted from final volume? [SM-4.c; 330.1-6.6]	X	
11)	Is the sample value calculated correctly? [SM-5; 330.1-7.1] TRC (mg/L) = $\frac{A \times 200}{\text{mL of sample}}$ A = mL PAO used	X	

COMMENTS:	
PROBLEMS:	**No problems observed.**

ANALYST:	**Rebecca Abel**	VPDES NO	**VA0087874**

Parameter: Total Suspended Solids
Method: Gravimetric, 103-105 °C
01-08

METHOD OF ANALYSIS:

X	18th Edition of Standard Methods-2540-D
	21st or On-Line Edition of Standard Methods-2540-D (97)

	TSS is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known TSS with each sample having appropriate % recovery. [SM 1020 B.1]	**X**	
2)	Is glass fiber filter a Whatman Grade 934AH, Pall Type A/E, Millipore Type AP40, or Scientific Specialties grade 161, Environmental Express Pro Weigh, or equivalent? [2]	**X**	
3)	Is a desiccator, drying oven for operating at 103° - 105° C, analytical balance, filtration apparatus, and suction flask available and in operable condition? [2]	**X**	
4)	Does desiccator have active color indicating desiccant? [2]	**X**	
5)	Is the analytical balance capable of weighing to 0.1 mg? [2]	**X**	
6)	To prepare filter, is it washed under vacuum, with 3 successive 20 mL portions of reagent-grade water? [3.a]	**NA**	
7)	Is the washed filter dried in oven at 103° - 105° C for at least 1 hour, cooled in desiccator, and weighed? Is drying-cooling-weighing cycle repeated until a constant dry weight is obtained or until weight change is less than 4% of previous weight or 0.5 mg, whichever is less? NOTE: See question 19. (**MUST DOCUMENT**) [3.a]	**NA**	
8)	After drying, is filter, Gooch crucible and/or weighing dish stored in desiccator until needed and then reweighed prior to use? [3.a]	**NA**	
9)	Is filter or Gooch crucible handled with forceps or tongs? [Permit]	**X**	
10)	Is sample well-mixed prior to filtration? [3.c;]	**X**	
11)	Is sample volume measured using Class A graduated cylinder? [SM 1070 B.2]	**X**	
12)	Is filter seated with reagent grade water prior to filtering sample? [3.c]	**X**	
13)	Is sample filtered under vacuum? [3.c]	**X**	
14)	Is sample filtration time limited to 10 minutes? Documentation is required. [3.b]	**X**	
15)	After sample is filtered, is filter washed with 3 successive 10 mL portions of reagent-grade water? [3.c]	**X**	
16)	Is filter, Gooch crucible and/or weighing dish dried for at least one hour at 103° - 105° C and is drying time documented? [3.c]	**X**	
17)	Is filter, Gooch crucible and/or weighing dish desiccated until they reach room temperature prior to weighing it? [3.c]	**X**	
18)	Is drying-cooling-weighing cycle repeated until a constant dry weight is obtained or until weight change is less than 4% of previous weight or 0.5 mg, whichever is less? (**MUST DOCUMENT**) [3.c]	**X**	
19)	If sufficiency of the drying time is cited, is it checked periodically? (VPDES permit holders conducting their testing must verify the adequacy of drying time by documented drying-cooling-weighting cycle once per year for each outfall. Commercial or centralized laboratories must maintain records for each client/outfall documenting drying time adequacy with drying-cooling-weighting cycle. This may also be applied to filter preparation. These records must be updated annually.) [Permit]	**X**	

		Y	N
20)	Was filter yield between 10.0 mg and 200 mg (18th), 2.5 mg and 200 mg (21st), or is at least 1000 mLs of sample filtered? [3.b]	X	
21)	Is the TSS of the sample calculated correctly? [4] TSS (mg/L) = (A - B) x 1000 mL/L / sample volume (mL) A= weight of filter + dried residue (mg) B= weight of filter (mg)	X	
22)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or after every 10 samples for 20th or 21st Edition [2540 D.3.c]	X	
23)	Do the results of the duplicate samples agree within 5% of their average? [3.c]	X	

COMMENTS:	**Facility uses pre-washed Environmental Express Pro Weigh filters.**
PROBLEMS:	**No problems observed**

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
EQUIPMENT TEMPERATURE LOG/THERMOMETER CALIBRATION CHECK SHEET
01-08

FACILITY NAME:	**FWA – Corbalis**	VPDES NO:	**VA0087874**	DATE:	**April 7, 2008**

EQUIPMENT	RANGE	IN RANGE		INSPECTION READING °C		CHECK & LOG DAILY		CORRECT INCREMENT		ANNUAL THERMOMETER VERIFICATION				
										Is the NIST/NIST Traceable Reference Thermometer within Manufacturer's expiration date or recertified yearly?			Yes\No	
										DATE CHECKED	MARKED		CORR FACTOR °C	INSPECTION TEMP °C
		Y	N	DEQ	Site	Y	N	Y	N		Y	N		
SAMPLE REFRIGER.	1-6° C	X		**3.3**	**3.3**	X		X		**03/22/07**	X		**-0.2**	**4**
AUTO SAMPLER	1-6° C													
REAGENT REFRIGER.	1-6° C													
pH METER	± 1° C	X								**02/28/08**	X		**+0.1**	**25**
DO METER	± 1° C													
OUTFALL THERMOMETER	± 1° C													
BOD INCUBATOR	20° C ± 1° C													
INCUBATOR	35 ± .5° C													
WATER BATH	44.5 ± .2° C													
O & G WATER BATH	70 ± 2° C													
Hg WATER BATH	95° C													
SOLIDS DRYING OVEN	103-105° C	X		**103.8**	**103.8**	X		X		**10/13/07**	X		**+0.1**	**104**
AUTOCLAVE	121° C IN 30 MIN													
HOT AIR STERILIZING	170 ± 10° C													

COMMENTS:	**Please remember to verify thermometers against a NIST certified thermometer within 12 months of the prior verification.**
PROBLEMS:	**None observed**

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
ANALYTICAL BALANCE CHECK SHEET
09/05

FACILITY NAME:	FWA – Corbalis	VPDES NO	VA0087874	DATE:	April 7, 2008

ANALYTICAL BALANCE 1

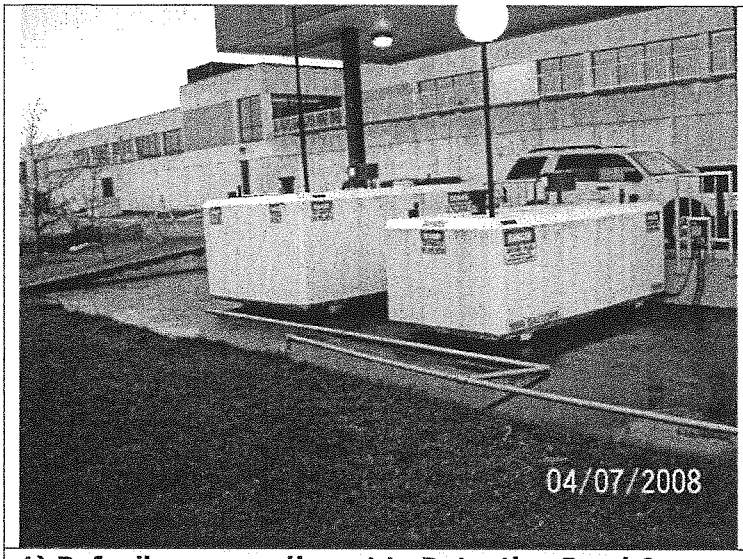
SPECIFICATION/TYPE/USE: Mettler AT400			
QUESTION:	**YES**	**NO**	**DATE/COMMENT**
BALANCE SERVICED YEARLY? [SM1020 C.1; Permit]	X		Mettler 02/08/08
BALANCE LEVEL? [Permit]	X		
BALANCE ZEROED BEFORE USE? [Permit]	X		
BALANCE OPERATED PROPERLY? [Mfr.]	X		
BALANCE LOCATION APPROPRIATE? [Permit]	X		
BALANCE CHECKED DAILY WITH 2 CERTIFIED WEIGHTS? [SM1020; Permit]	X		
CLASS 1-2 WEIGHTS RECERTIFIED YEARLY? [NIST]	X		11/06/07 (Ultra class)
BALANCE SURFACES CLEAN? [Permit]	X		

ANALYTICAL BALANCE 2

SPECIFICATION/TYPE/USE:			
QUESTION:	**YES**	**NO**	**DATE/COMMENT**
BALANCE SERVICED YEARLY?			
BALANCE LEVEL?			
BALANCE ZEROED BEFORE USE?			
BALANCE OPERATED PROPERLY?			
BALANCE LOCATION APPROPRIATE?			
BALANCE CHECKED DAILY WITH 2 CERTIFIED WEIGHTS?			
CLASS 1-2 WEIGHTS RECERTIFIED YEARLY?			
BALANCE SURFACES CLEAN?			

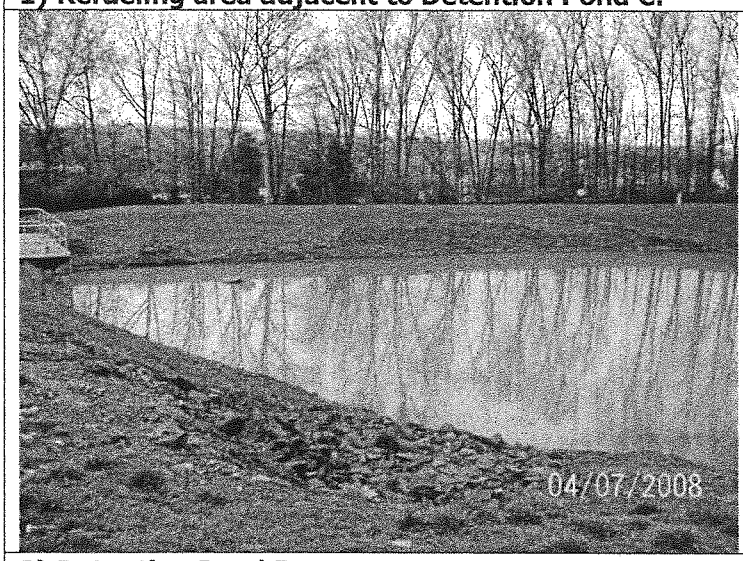
DEQ BALANCE CHECK:				DEQ BALANCE CHECK			
DEQ 10 gm Wt.	Weight: 10.0003	DEQ 0.001 gm Wt.	Weight:				
DEQ 1 gm Wt.	Weight: 1.0000						

Problems: No problems observed.



1) Refueling area adjacent to Detention Pond C.

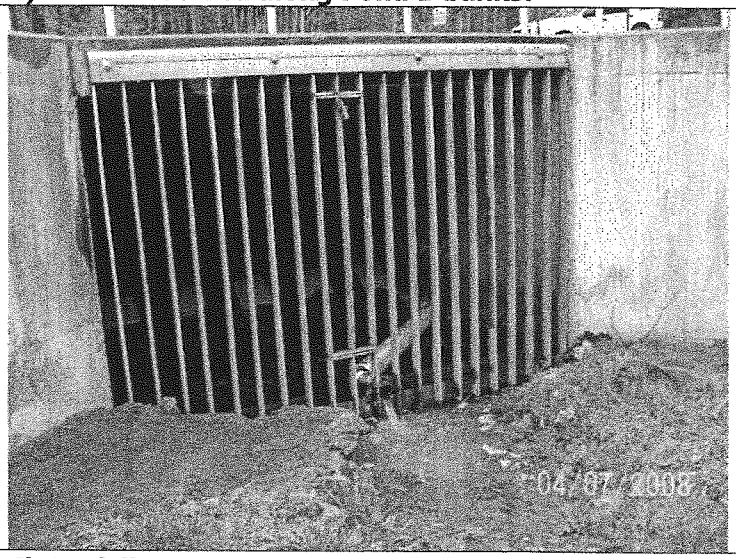
2) Detention Pond C.



3) Detention Pond B.

4) Trash observed along Pond B banks.

5) Battery found outdoors near solids pad.



6) Outfall 002.

Facility Name: FWA – Corbalis
Photos by: Terry Nelson
Layout by: Terry Nelson

VPDES Permit No. VA0087874
April 7, 2008
Page 1 of 1

To:	Alison Thompson
From:	Jennifer Carlson
Date:	February 14, 2014
Subject:	Planning Statement for Corbalis WTP
Permit Number:	VA0087874

Information for Outfalls 001/002/003:

Discharge Type: Industrial
Discharge Flow:
Receiving Stream: See table at the end of this form for the information
Latitude / Longitude: for each of the outfalls.
Rivermile:
Streamcode:
Waterbody:
Water Quality Standards:
Drainage Area:

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

<u>Outfall 001</u>

Outfall 001 discharges into Sugarland Run. The closest DEQ monitoring station is a biological monitoring station, 1aSUG006.28, located at Wiehle Avenue, approximately 0.2 miles downstream of Outfall 001. The following is the summary for this portion of Sugarland Run, as taken from the 2012 Integrated Report:

Class III, Section 9.

DEQ monitoring station located in this segment of Sugarland Run:

- *Biological monitoring station 1aSUG006.28, at Wiehle Avenue.*

Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Citizen monitoring also finds a high probability of adverse conditions for biota.

The fish consumption, recreation, and wildlife uses were not assessed.

<u>Outfall 002</u>

Outfall 002 discharges into an unnamed tributary to Sugarland Run. The closest downstream DEQ monitoring station is a trend ambient monitoring station, 1aSUG004.42, located on Sugarland Run. This station is located at the Rt. 7 bridge, approximately 2.2 miles downstream of Outfall 002. The following is the summary for this portion of Sugarland Run, as taken from the 2012 Integrated Report:

Class III, Section 9.

DEQ monitoring stations located in this segment of Sugarland Run:

- *Biological monitoring station 1aSUG003.52 near Brasswood Place*
- *Ambient water quality monitoring station 1aSUG004.42, at Route 7*

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use.

Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Citizen monitoring finds a high probability of adverse conditions for biota.

The wildlife use is considered fully supporting. The fish consumption use was not assessed.

Outfall 003

Outfall 003 discharges into an unnamed tributary to Old Sugarland Run. The closest DEQ monitoring stations are a biological monitoring station and an ambient trend station located on Sugarland Run, upstream of the confluence of Old Sugarland Run with Sugarland Run. These stations are located 2.7 miles and 3.7 miles upstream of the confluence, respectively, near Brasswood Place and the Rt. 7 bridge. The following is the summary for this portion of Sugarland Run, as taken from the 2012 Integrated Report:

Class III, Section 8c, special stds. PWS.

DEQ monitoring station located in this segment of Sugarland Run:

- *Biological monitoring station 1aSUG003.52 near Brasswood Place*
- *Ambient water quality monitoring station 1aSUG004.42, at Route 7*

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use.

Biological monitoring finds benthic macroinvertebrate impairments, resulting in an impaired classification for the aquatic life use. Citizen monitoring finds a high probability of adverse conditions for biota.

The wildlife and public water supply uses are considered fully supporting. The fish consumption use was not assessed.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

Outfall 001 discharges to a stream segment that is on the 303(d) list.

Table A. 303(d) Impairment and TMDL information for the receiving stream segment

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report						
Sugarland Run	Aquatic Life	Benthic Macroinvertebrates	No	N/A	N/A	2024

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes, there are listed impairments downstream of all three outfalls.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report							
Sugarland Run	Aquatic Life	Benthic Macroinvertebrates	Outfall 002: 0.8 miles Outfall 003: 1.2 miles	No	N/A	N/A	2024
	Recreation	*E. coli*	Outfall 001: 1.8 miles Outfall 002: 0.8 miles Outfall 003: 1.2 miles	No*	Not expected to discharge pollutant	---	---

** The Sugarland Run, Mine Run and Pimmit Run Bacteria TMDL was completed and approved by EPA on September 26, 2013. The Corbalis WTP did not receive a WLA in this TMDL as it is not expected to discharge the pollutant of concern (bacteria). Information regarding the completed bacteria TMDL will be included in the 2014 Integrated Report.*

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

Outfall 001 discharges directly to a portion of Sugarland Run that was listed in the 2012 Integrated Report as impaired, due to poor health of the benthic macroinvertebrate communities. In support of this recent listing and the development of a benthic TMDL in the future, DEQ staff requests that this facility monitor for total dissolved solids, conductivity, and nutrients (total phosphorus, nitrate, nitrite and ammonia) at this outfall.

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

The intake for the Fairfax County Water Authority is located within 5 miles of Outfall 003.

Receiving Waters Information:

Outfall:	001	002	003
Receiving Stream Name :	Sugarland Run	Sugarland Run, UT	Old Sugarland Run, UT
Drainage Area at Outfall:	<5 sq.mi.	<5 sq.mi.	<5 sq.mi.
Stream Basin:	Potomac River	Potomac River	Potomac River
Subbasin:	Potomac River	Potomac River	Potomac River
Section:	9	9	8c
Special Standards:	None	None	PWS
Stream Class:	III	III	III
Streamcode:	1aSUG	1aOFT	1aXIW
River Mile:	6.58	0.82	0.24
Waterbody ID:	VAN-A10R	VAN-A10R	VAN-A10R
Average Flow (MGD):	0.133 MGD	0.022 MGD	0.1 MGD
Coordinates:	38 59 30, -77 22 00	38 59 45, -77 21 30	39 03 15, -77 20 45

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Corbalis WTP Permit No.: VA0087874

Receiving Stream: Sugarland Run, Sugarland Run, UT, and Old Sugarland Run Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =		mg/L
90% Temperature (Annual) =		deg C
90% Temperature (Wet season) =		deg C
90% Maximum pH =		SU
10% Maximum pH =		SU
Tier Designation (1 or 2) =	1	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	0	MGD
7Q10 (Annual) =	0	MGD
30Q10 (Annual) =	0	MGD
1Q10 (Wet season) =	0	MGD
30Q10 (Wet season)	0	MGD
30Q5 =	0	MGD
Harmonic Mean =	0	MGD

Mixing Information

Annual - 1Q10 Mix =	100	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	100	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	102.8	mg/L
90% Temp (Annual) =	22.1	deg C
90% Temp (Wet season) =		deg C
90% Maximum pH =	7.6	SU
10% Maximum pH =		SU
Discharge Flow =	0.555	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	**9.9E+02**
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	**9.3E+00**
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	**2.5E+00**
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	**3.0E+00**	--	na	**6.0E-04**
Ammonia-N (mg/l) (Yearly)	0	1.70E+01	2.44E+00	na	--	1.70E+01	2.44E+00	na	--	--	--	--	--	--	--	--	--	**1.70E+01**	**2.44E+00**	na	--
Ammonia-N (mg/l) (High Flow)	0	1.70E+01	3.98E+00	na	--	1.70E+01	3.98E+00	na	--	--	--	--	--	--	--	--	--	**1.70E+01**	**3.98E+00**	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	**4.0E+04**
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	**6.4E+02**
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	**5.1E+02**
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	**2.0E-03**
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	**5.3E+00**
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	**6.5E+04**
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	**2.2E+01**
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	**1.4E+03**
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	**1.9E+03**
Cadmium	0	4.0E+00	1.2E+00	na	--	4.0E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	**4.0E+00**	**1.2E+00**	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	**1.6E+01**
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	na	**8.1E-03**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	**1.6E+03**

Attachment 8

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	5.8E+02	7.6E+01	na	--	5.8E+02	7.6E+01	na	--	--	--	--	--	--	--	--	--	5.8E+02	7.6E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	1.4E+01	9.2E+00	na	--	1.4E+01	9.2E+00	na	--	--	--	--	--	--	--	--	--	1.4E+01	9.2E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD[C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE[C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1.2E+02	1.4E+01	na	--	1.2E+02	1.4E+01	na	--	--	--	--	--	--	--	--	--	1.2E+02	1.4E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.9E+02	2.1E+01	na	4.6E+03	1.9E+02	2.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.9E+02	2.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	na	**4.2E+03**
Silver	0	3.6E+00	--	na	--	3.6E+00	--	na	--	--	--	--	--	--	--	--	--	**3.6E+00**	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	**3.3E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	**4.7E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	**6.0E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	na	**2.8E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	**7.0E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	**3.0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	**2.4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	**2.4E+01**
Zinc	0	1.2E+02	1.2E+02	na	2.6E+04	1.2E+02	1.2E+02	na	2.6E+04	--	--	--	--	--	--	--	--	**1.2E+02**	**1.2E+02**	na	**2.6E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	7.0E-01
Chromium III	4.5E+01
Chromium VI	6.4E+00
Copper	5.5E+00
Iron	na
Lead	8.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	1.2E+01
Selenium	3.0E+00
Silver	1.4E+00
Zinc	4.8E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

3/18/2014 6:03:24 AM

Facility = FCWA - Corbalis WTP
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 19
WLAc =
Q.L. = 200
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 19
Average Weekly limit = 19
Average Monthly LImit = 19

The data are:

200

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated industrial wastewater/stormwater into a water body in Fairfax County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2014 to XXX, 2014

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial Wastewater/Stormwater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Fairfax County Water Authority, 8570 Executive Park Ave, Fairfax, VA 22031-2218, VA0087874

NAME AND ADDRESS OF FACILITY: Fairfax County Water Authority - Corbalis Water Treatment Plant, 1295 Fred Morin Rd, Herndon, VA 20170

PROJECT DESCRIPTION: Fairfax County Water Authority has applied for a reissuance of a permit for the public Corbalis Water Treatment Plan. The applicant proposes to release treated industrial wastewaters/storm water at a rate of up to 0.555 million gallons per day into a water body. The facility proposes to release the treated industrial wastewaters/storm water in the following streams: Sugarland Run, an unnamed tributary to Sugarland Run, and Old Sugarland Run in Fairfax County in the Potomac watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: Total Residual Chlorine, Total Suspended Solids, and pH. The permit requires monitoring without limitation for Flow, Ammonia as N, Total Phosphorus, Nitrate+Nitrite, Total Kjeldahl Nitrogen, Total Nitrogen, Conductivity, and Total Dissolved Solids.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Alison Thompson
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3834 E-mail: Alison.Thompson@deq.virginia.gov Fax: (703) 583-3821

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804) 786-6124

June 26, 2013

Susan Mackert
DEQ – Northern Regional Office
13901 Crown Court
Woodbridge, VA 20112

Re: VA0087874, Fairfax Water Corbalis Water Treatment Plant

Dear Ms. Mackert:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Sugarland Conservation Site is located within the project vicinity. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Sugarland Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high biodiversity. The natural heritage resource of concern at this site is:

Glyptemys insculpta	Wood turtle	G3/S2/NL/LT

The Wood turtle ranges from southeastern Canada, south to the Great Lake states and New England. In Virginia, it is known from northern counties within the Potomac River drainage (NatureServe, 2009). The Wood turtle inhabits areas with clear streams with adjacent forested floodplains and nearby fields, wet meadows, and farmlands (Buhlmann et al., 2008; Mitchell, 1994). Since this species overwinters on the bottoms of creeks and streams, a primary habitat requirement is the presence of water (Mitchell, 1994).

Threats to the wood turtle include habitat fragmentation, urbanization, and automobile or farm machinery mortality (Buhlmann et al., 2008). Please note that the Wood turtle is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

In addition, Sugarland Run has been designated by the VDGIF as a "Threatened and Endangered Species Water" and the associated species is the Wood turtle.

To minimize impacts to aquatic resources, DCR recommends the use of uv/ozone to replace chlorination disinfection and utilization of new technologies as they become available to improve water quality. Due to the legal status of Wood turtle, DCR also recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The VDGIF maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov).

Should you have any questions or concerns, feel free to contact René Hypes at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. René Hypes
Project Review Coordinator

CC: Ernie Aschenbach, VDGIF

Literature Cited

Buhlmann, K, T. Tuberville, and W. Gibbons. 2008. Turtles of the southeast. University of Georgia Press. Athens, GA. 252 pp.

Mitchell, J. C. 1994. Reptiles of Virginia. Smithsonian Institution Press, Washington. pp. 88-91.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 8, 2010).